REMARKS

Claims 1-23 are pending in the application. By this paper, claim 18 has been amended. No new matter is added by this amendment. Reconsideration and allowance of claims 1-23 in light of the amendment and arguments herein is respectfully requested.

Claim amendments

Claim 18 has been amended to correct a minor typographical error noted during review of the claims. The recitation "the at least one passband band of frequencies" has been corrected by deleting the word "band" to correct an obvious error. No new matter is added by this amendment and this amendment is not made for any reason related to patentability but to improve the readability of the claim.

Claim rejections

Claims 1-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over several references including U.S. patent number 5,661,651 to Geschke ("Geschke"), U.S. patent number 6,271,748 to Derbyshire ("Derbyshire ") and U.S. patent number 6,362,732 to Konchin ("Konchin"). Reconsideration of these rejections is respectfully requested.

The present invention defined by claims 1-23 relates to method and apparatus in a remote tire pressure monitor system. Tire monitors are located within each tire of the vehicle where they can measure tire parameters such as air pressure in the tire. In accordance with the method and apparatus, electromagnetic energy is used to wirelessly convey tire data from tire monitor transmitters at respective wheels of a vehicle to a radio receiver. Each wheel includes a tire which has a characteristic frequency response, which is defined at page 5, lines 4-8, of the present application:

> The characteristic frequency response represents the tire's inherent reaction to electromagnetic energy imparted on the tire. Some frequencies will be absorbed or otherwise attenuated by the tire. Other frequencies will be passed with little or no attenuation.

Because of the electromagnetic environment around the tire and wheel, such as metallic strands within a runflat tire mounted on the wheel, communication of the electromagnetic energy from transmitter to receiver will be distorted. The distortion is a part of the characteristic frequency response. The nature of the distortion is that some frequencies of electromagnetic energy are suppressed or attenuated while energy at other frequencies is passed without attenuation. The frequencies at which energy is attenuated are referred to as *attenuation band frequencies*. Similarly, the frequencies at which energy is not attenuated are referred to as *passband frequencies*.

Recognizing the existence of this distortion and its effect on reliable communication, the inventor has specified in claim 1 that the tire monitors are "configured to transmit tire data at a transmission frequency chosen in the passband frequencies of the characteristic frequency response of the tire" (*emphasis added)*. Independent claims 5, 13, 16 21 and 23 include limitations directed to this or similar concepts.

As noted at page 11, lines 27-31 of the present application, this design offers unique advantages over prior art systems. "By tuning the transmission frequency to the tire's frequency response, *attenuation* of the transmitted power of the radio signal *is minimized, ensuring reliable reception of the tire data at the receiver*. Further, a lower transmit power may be used in the transmitter, thus extending the battery life of the battery which powers the tire monitor" *(emphasis added)*.

Other embodiments provide additional advantages. For example, claim 16 is directed to a *method for selecting a transmission frequency for a tire monitor*. In accordance with the method, a transmission frequency is selected by using the frequency response of the tire to identify frequencies having reduced attenuation. Reduced attenuation corresponds to passing the energy without interference, enabling reliable reception. The actual transmission frequency can then be selected from among the identified frequencies. In this manner, usable frequencies for a tire model can be identified and specified for use by tire monitor transmitters used with tires of that model.

In contrast, Geschke relates to a system in which different tire monitors on a vehicle use different frequencies for transmission. By detecting transmitted energy at a predetermined frequency, a receiver of the vehicle can determine which tire monitor originated the

transmission. Geschke fails to recognize the problem identified by the inventor of the present application, that of attenuation by the wheel and tire in some attenuation bands. More importantly, Geschke fails to make the improvement afforded by the present invention defined by claims 1-23, that of selecting a transmission frequency based on or in accordance with or using the frequency response of the tire. This aspect of the pending claims is completely missing from the prior art of record, including Geschke. Accordingly, claims 1-23 include limitations nowhere shown, described or suggested by the prior art of record. Withdrawal of the rejections of claims 1-23 is respectfully requested.

Interview Summary

During a telephonic interview between the examiner and the undersigned attorney on November 13, 2003, patentability of claims 1-23 was discussed. Substantially the same points of argument were made in favor of patentability and it was agreed that this response would be submitted for review and consideration by the examiner.

With this response, the application is believed to be in condition for allowance. Should the examiner deem a telephone conference to be of assistance is advancing the application to allowance, the examiner is invited to call the undersigned attorney at the telephone number below.

Respectfully submitted,

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